

This is a draft of possible amendments to the existing regulation in the General Industry Safety Orders regarding exposure to lead. This draft is for discussion purposes only, and is not a rulemaking proposal.

§5198. Lead.

(a) Scope and Application.

- (1) This section applies to all occupational exposure to lead, except as provided in paragraph (a)(2).
- (2) This section does not apply to the construction industry or to agricultural operations.

(b) Definitions.

For purposes of this section, the definitions in section 5161 do not apply to the terms used throughout this section.

Action Level. Employee exposure, without regard to the use of respirators, to airborne lead at an 8-hour time-weighted average concentration of 2 30 micrograms per cubic meter of air (2 30ug/M3).

Altering or disturbing. Subjecting to a process that may result in the release of dust, mist, fume, or other particles. Such processes may include, but are not limited to welding, brazing, torch soldering, torch cutting, melting, pouring, cutting, shredding, grinding, polishing, machining, scraping, sanding, abrading, spraying, sweeping, raking, and shoveling.

Chief. The Chief of the Division of Occupational Safety and Health, P.O. Box 420603, San Francisco, California 94142.

Director. The Director, National Institute for Occupational Safety and Health (NIOSH), U. S. Department of Health and Human Services, or designee.

Lead. Metallic lead, all inorganic lead compounds, and organic lead soaps. Excluded from this definition are all other organic lead compounds.

Threshold amount of lead work.

(1) Altering or disturbing any work surface or material that:

(A) Is known to contain lead at a concentration equal to or greater than 1.0% by weight as specified by its safety data sheet or similar specification sheet; or

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(B) Is reasonably anticipated to contain lead at a concentration equal to or greater than 1.0% by weight. Such materials include, but are not limited to, materials purchased as scrap lead, solder, bullet fragments, lead sheeting, lead cable housing, lead billets, and lead acid batteries.

(2) Torch cutting any scrap metal.

(3) Part time and low levels of lead work are exempt from this definition if the employer can document that employees are performing such work less than 8 hours per month.

(c) Permissible Exposure Limit (PEL).

(1) The employer shall assure that no employee is exposed to lead at an 8-hour time-weighted average concentration greater than 10 50 micrograms per cubic meter of air (10 50ug/M3).

(2) If an employee is exposed to lead for more than 8 hours in any work day, the permissible exposure limit for that day, as a time-weighted average concentration (TWA), shall be reduced according to the following formula:

Maximum permissible limit (in ug/M3) = 80 400 / hours worked in the day.

(3) When respirators are used to supplement engineering and work practice controls to comply with the PEL, employee exposure, for the purpose of determining whether the employer has complied with the PEL, may be considered to be at the level provided by the protection factor of the respirator for those periods the respirator is worn. Those periods may be averaged with exposure levels during periods when respirators are not worn to determine the employee's daily TWA exposure.

(d) Exposure Monitoring. * * * * *

(e) Compliance. * * * * *

(f) Respiratory Protection. * * * * *

(g) Protective Work Clothing and Equipment. * * * * *

(h) Housekeeping. * * * * *

(i) Hygiene Facilities and Practices. * * * * *

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(j) Medical Surveillance.

(1) General.

(A) The employer shall institute a medical surveillance program for all employees who are or may be exposed at or above the action level for more than 10 days per year and for employees whose work involves a threshold amount of lead work.

(B) The employer shall assure that all medical examinations and procedures are performed by or under the supervision of a licensed physician.

(C) The employer shall provide the required medical surveillance including multiple physician review under subsection (j)(3)(C) without cost to employees and at a reasonable time and place.

(2) Biological Monitoring.

(A) Blood Lead and Zinc Protoporphyrin Sampling and Analysis. The employer shall make available biological monitoring in the form of blood sampling and analysis for lead and zinc protoporphyrin (ZPP) levels to each employee covered under subsection (j)(1)(A) on the following schedule:

1. Initially, and at least every two months for the first 6 months of placement, or upon change in task to higher exposure, then at least every 6 months to each employee covered under subsection (j)(1)(A); and

2. At least every two months for each employee whose last blood sampling and analysis indicated a blood lead level at or above ~~10~~ 40 $\mu\text{g}/\text{dL}$ ~~100 g~~ but below 20 $\mu\text{g}/\text{dL}$ of whole blood. This frequency shall continue until ~~three~~ two consecutive blood samples and analysis, taken at least 30 days apart, all indicate a blood lead level below ~~10~~ 40 $\mu\text{g}/\text{dL}$ ~~100 g~~ of whole blood; and

3. At least monthly for each employee whose last blood sampling and analysis indicated a blood lead level at or above 20 $\mu\text{g}/\text{dL}$ of whole blood and during the removal period of each employee removed from exposure to lead due to an elevated blood lead. ~~This frequency shall continue until three consecutive blood samples and analysis indicate a blood lead level below 10 $\mu\text{g}/\text{dL}$ of whole blood.~~

4. ZPP determinations shall be made available as soon as possible but no later than the first biological monitoring scheduled for an employee for each employee whose last blood lead level was at or above 20 $\mu\text{g}/\text{dL}$.

~~(B) Follow-Up Blood Sampling Tests. Whenever the results of a blood lead level test indicate that an employee's blood lead level exceeds the numerical criterion for medical removal under subsection (k)(1), the employer shall provide a second (follow-up) blood~~

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~~sampling test within two weeks after the employer receives the results of the first blood sampling test.~~

~~(B) Accuracy of Blood Lead Level Sampling and Analysis. Blood lead level sampling and analysis provided pursuant to this subsection shall be analyzed by a laboratory which meets Federal OSHA accuracy requirements in blood lead proficiency testing (PT) and is on the OSHA List of Laboratories Approved for Blood Lead Analysis, have an accuracy (to a confidence level of 95 percent) within plus or minus 15 percent or 6 $\mu\text{g}/100\text{ml}$, whichever is greater, and shall be conducted by a laboratory licensed by the Center for Disease Control (CDC), U.S. Department of Health and Human Services, or which has received a satisfactory grade in blood lead proficiency testing from CDC in the prior 12 months.~~

~~(C) Employee Notification. Within five working days after the receipt of biological monitoring results, the employer shall notify in writing each employee whose blood lead level exceeds 40 $\mu\text{g}/100\text{g}$:~~

- ~~1. Of that employee's blood lead level; and~~
- ~~2. That the standard requires temporary medical removal with Medical Removal Protection benefits when an employee's blood lead level exceeds the numerical criterion for medical removal under subsection (k)(1).~~

(3) Medical Examinations and Consultations.

(A) Frequency. The employer shall make available medical examinations and consultations to each employee covered under Section 5198(j)(1)(A) on the following schedule:

- ~~1. Within a month of being covered under subsection (j)(1)(A) and a~~ At least annually thereafter for each employee for whom a blood sampling test conducted at any time during the preceding 12 months indicated a blood lead level at or above ~~20~~ 40 $\mu\text{g}/\text{dL}$ ~~100~~ g;
2. Prior to assignment for each employee being assigned for the first time to an area in which 8-hour time-weighted concentrations of airborne lead are at or above the action level;
3. As soon as possible, upon notification by an employee either that the employee has developed signs or symptoms commonly associated with lead intoxication, that the employee desires medical advice concerning the effects of current or past exposure to lead on the employee's ability to procreate a healthy child, or that the employee has demonstrated difficulty in breathing during a respirator fitting test or during use; and

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4. As medically appropriate for each employee removed from exposure to lead due to a risk of sustaining material impairment to health, or otherwise limited pursuant to a final medical determination.

(B) Content. Medical examinations made available pursuant to subsections (j)(3)(A)1-2 shall include the following elements:

1. A detailed work history and a medical history, with particular attention to past lead exposure (occupational and non-occupational), personal habits (smoking, hygiene), and past gastrointestinal, hematologic, renal, cardiovascular, reproductive and neurological problems;
2. A thorough physical examination, with particular attention to teeth, gums, hematologic, gastrointestinal, renal, cardiovascular, and neurological systems. Pulmonary status should be evaluated if respiratory protection will be used;
3. A blood pressure measurement;
4. A blood sample and analysis which determines:
 - a. Blood lead level;
 - b. Hemoglobin and hematocrit determinations, red cell indices, and examination of peripheral smear morphology;
 - c. Zinc protoporphyrin for employees whose last blood lead level was at or above 20 µg/dl;
 - d. Blood urea nitrogen; and
 - e. Serum creatinine.
5. A routine urinalysis with microscopic examination; and
6. Any laboratory or other test which the examining physician deems necessary by sound medical practice.

The content of medical examinations made available pursuant to subsections (j)(3)(A)3-4 shall be determined by an examining physician and, if requested by an employee, shall include pregnancy testing or laboratory evaluation of male fertility.

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(k) Medical Removal Protection.

(1) Temporary Removal Due to Elevated Blood Lead Levels.

The employer shall remove an employee from work having an exposure to lead ~~at or above the action level~~ on each occasion that either: the average of the last three

~~(A) The last periodic blood sampling tests conducted pursuant to this section (or the average of all blood sampling tests conducted over the previous six (6) months, whichever is longer) indicates that the employee's blood lead level is at or above 30 50 ug/dl 100 g of whole blood; or provided, however, that an employee need not be removed if the last blood sampling test indicates a blood lead level below 40 ug/100 g of whole blood.~~

~~(B) The last two monthly blood sampling tests are at or above 20ug/dl of whole blood.~~

(2) Temporary Removal Due to a Final Medical Determination.

(A) The employer shall remove an employee from work having an exposure to lead ~~at or above the action level~~ on each occasion that a final medical determination results in a medical finding, determination, or opinion that the employee has a detected medical condition which places the employee at increased risk of material impairment to health from exposure to lead.

Note: For the purposes of this section, the phrase "final medical determination" shall mean the outcome of the multiple physician review mechanism or alternate physician determination mechanism used pursuant to the medical surveillance provisions of this section.

(B) Where a final medical determination results in any recommended special protective measures for an employee, or limitations on an employee's exposure to lead, the employer shall implement and act consistent with the recommendation.

(3) Return of the Employee to Former Job Status.

(A) The employer shall return an employee to his or her former job status:

1. For an employee removed under the provisions of subsection (k)(1)(A) due to a blood lead level at or above 50 µg/100 g when two consecutive blood sampling tests, taken at least 15 days apart, both indicate that the employee's blood lead level is at or below 15 40 µg/dL 100 g of whole blood.; and

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2. For an employee removed due to a final medical determination, when a subsequent final medical determination results in a medical finding, determination, or opinion that the employee no longer has a detected medical condition which places the employee at increased risk of material impairment to health from exposure to lead.

(B) For the purposes of this section, the requirement that an employer return an employee to his or her former job status is not intended to expand upon or restrict any rights an employee has or would have had, absent temporary medical removal, to a specific job classification or position under the terms of a collective bargaining agreement.

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(I) Employee Information and Training.

(1) Training Program.

(A) Each employer who has a workplace in which there is a potential exposure to airborne lead at any level shall inform employees of the content of Appendices A and B of this regulation.

(B) The employer shall institute a training program for and assure the participation of all employees who are subject to exposure to lead at or above the action level or for whom the possibility exists of skin or eye irritation from exposure to lead and for employees whose work involves a threshold amount of lead work.

(C) For each employee covered by subsection (I)(1)(B) the The employer shall provide initial training prior to the time of initial job assignment ~~for those employees subsequently covered by this paragraph and the training shall be repeated at least annually the training .~~

~~(D) The training program shall be repeated at least annually for each employee covered by subsection (I)(1)(C).~~

(D) E) The employer shall assure that effective training in the following topics shall be provided for each employee covered by subsection (I)(1)(B) is informed of the following:

1. The content of this standard and its appendices;
2. The specific nature of the operations which could result in exposure to lead above the action level;
3. The purpose, proper selection, fitting, use, and limitations of respirators;

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4. The purpose and a description of the medical surveillance program, and the medical removal protection program;

5. ~~including~~ information concerning the adverse health effects associated with excessive exposure to lead ~~(with particular attention to the adverse reproduction effects on both males and females);~~ routes of exposure; and the hazards of lead brought home from the job especially to young children and pregnant women;

6. Information on the adverse reproduction effects on both males and females of low-level lead exposure, associated with blood lead levels even under 5 ug/dl. And of the employer's duty, as required by subsection (j)(3), to make available medical examination and consultations to each employee desiring medical advice concerning the employee's ability to procreate a healthy child.

~~7~~5. The engineering controls and work practices associated with the employee's job assignment;

~~8~~6. The contents of any compliance plan in effect; and

~~9~~7. Instructions to employees that chelating agents should not routinely be used to remove lead from their bodies and should not be used at all except under the direction of a licensed physician.

(2) Access to Information and Training Materials.

(A) The employer shall make a copy of this standard and its appendices readily available to all affected employees including employees exposed below the action level.

(B) The employer shall provide, upon request, all materials relating to the employee information and training program to the Chief.

(m) Communication of Hazards. * * * * *

(n) Recordkeeping. * * * * *

(o) Observation of Monitoring. * * * * *

(p) Appendices.

The information contained in the appendices to this section is not intended to create any additional obligations not otherwise imposed by this standard nor detract from any existing obligation.

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Note: Authority cited: Section 142.3, Labor Code. Reference: Section 142.3, Labor Code; and Federal Register Volume 77, Number 58 (Monday, March 26, 2012) Pages 17574-17896.

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